

REMARKS

Claims 1, 2-31 are presently pending in the captioned application. Subsequent to the enclosed amendment, claims 1, 3, 10 and 20-21 are currently amended.

Claims 4, 9, 11, 15, 19, 22 and 27 are pending as previously presented.

Claims 5-8 are pending as originally filed.

Claims 12-14, 16-18, 23-26 and 28-31 are withdrawn.

Claim 2 is canceled without disclaimer or prejudice as to the subject matter contained therein.

Claim 1 has been amended to incorporate the limitations of now canceled claim 2. Claim 3 has been amended to recite "Y represents a portion obtained by removing -C=C- from the aromatic or heterocyclic group". Claims 3, 10 and 20-21 have been amended to change all instances of "bifunctional" to "difunctional".

The specification has been amended in response to various objections and rejections. In particular, the specification has been amended to change all instances of "bifunctional" to "difunctional" and at page 43, lines 14-15, to change "propylene glycol methacrylate" to "polypropylene glycol methacrylate". The specification has further been amended to recite that "Y represents a portion obtained by removing -C=C- from the aromatic or

heterocyclic group" and that "K represents a portion obtained by removing -C=C- from the aromatic or heterocyclic group".

No new matter within the meaning of § 132 has been added by any of the amendments.

Applicants submit evidence of common ownership at the time of invention between the captioned application and the alleged prior art reference US 6,194,511 ("Momoda et al."). A copy of a Notice of Recordation of Assignment Sheet for Momoda et al. attached to an Assignment showing an execution date of February 18, 1999, is attached herewith.

Applicants also file a terminal disclaimer over US 6,802,993.

Accordingly, Applicants respectfully request the Examiner to enter the indicated amendments of Appendices A and B and to reconsider and withdraw the rejections and to allow all claims as presently claimed in this application.

1. Restriction Requirement over alleged prior art
US 6,194,511 and JP 10-338869

The Office Action makes the Restriction Requirement final in view of alleged prior art references US 6,194,511 ("Momoda et al.") and JP 10-338869. The Office Action states:

1. The election with traverse of Group I in

the reply filed on October 15, 2004 is acknowledged. The traversal is on the grounds that Groups II and III share the same technical feature identified in the restriction and election of species requirement mailed September 15, 2004.

2. This is not found persuasive because although Groups II and III share the same technical feature as that of Group I, the special technical feature does not make a contribution over Momoda et al. Patent No.6,194,511 nor Japanese Patent No. 10-338869 for the reasons espoused in paragraphs, 3-5 of the restriction and election of species requirement.

3. Momoda et al. qualifies as prior art under 35 U.S.C. 102(e)/103 because the special technical feature does not make a contribution over it within the confines of 35 U.S.C. 102(e)/103. According to MPEP § 706-02(k), "subject matter which was prior art under former 35 U.S.C. 103 via 35 U.S.C. 102(e) is now disqualified as prior art against the claimed invention if that subject matter and the claimed invention 'were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.'"

4. MPEP § 706.02(1)(2), the section entitled "II. Evidence Required to Establish Common Ownership" requires "a statement to the effect that the application and reference were, **at the time the invention was made**, owned by, or subject to an obligation of assignment to, the same person [emphasis added]." The Traversal section of the election filed October 15, 2004 (page 8, third paragraph, the last two lines) merely contends that "Momoda et al. and the captioned application are commonly assigned to Tokuyama Corp." without specifying the common assignment at the time the invention was made.

5. Even if it had been established that there was; a common assignment at the time the invention was made, the special technical feature does not make a contribution over Japanese Patent No. 10/338869. Furthermore, European Patent No. 940,694 is an equivalent of Momoda et al. and has a publication date of September 8, 1999 which antedates the effective filing date of the instant application of July 18, 2000 (the 371 date). The special technical feature does not make a contribution over the equivalent European patent for the same reasons as advanced with respect to Momoda et al.

The publication date of the European patent can only be antedated by an English translation of Japanese priority application no. 205165/99 filed July 19, 1999 wherein the subjett matter therein supports that of the instant application.

Applicants respectfully traverse the finality of the Restriction Requirement because the alleged prior art is not prior art with respect to the presently claimed invention. Despite the Office Action's suggestion otherwise, Momoda et al. was subject to an obligation of common assignment at the time of invention. Moreover, Applicants perfect their claim to foreign priority under § 119, thereby avoiding European Patent No. 940,694 and Japanese Patent No. 10/338869.

As will be noted from the text of the previous Response, Applicants proffered evidence of common ownership between Momoda et al. and the captioned application, which was to be submitted at an

appropriate stage during normal prosecution. Applicants further noted that the submitted arguments were only made at that point for the benefit of expediting prosecution to show that Momoda et al. is not a proper reference in a putative §102(e)/§103 obviousness rejection and to further show that the Restriction over those reference was clearly not proper.

But given the present finality of the Restriction Requirement and the outstanding first official action on the merits officially citing Momoda et al. as prior art, Applicants now properly submit evidence of common ownership at the time of invention between the captioned application and the alleged prior art.

A copy of "Notice of Recordation of Assignment Sheet" for Momoda et al. attached to an Assignment showing an execution date of February 18, 1999, is submitted herewith. Since the captioned application and Momoda et al. were subject to an obligation of common ownership to Tokuyama Corp. at the time the invention was made, the Restriction Requirement based on the Momoda et al. patent must be withdrawn.

With regard to the European Patent No. 940,694, which is an equivalent of Momoda et al., Applicants note that the publication date of the European patent of September 9, 1999, is antedated by perfecting Applicants claim to priority to Japanese priority application no 205165/99 filed July 19, 1999, with the submitted

certified translation of the priority document. The Japanese priority application clearly supports the subject matter of the captioned application.

With regard to Japanese Patent No. 10/338869, Applicants note that the reference fails to make a contribution over the art. Although the reference espouses an uncured formulation, the teachings nevertheless fail to provide the technical feature of an uncured composition comprising A) a monomer whose homopolymer has a L-scale Rockwell hardness of not greater than 40, B) a monomer whose homopolymer has a L-scale Rockwell hardness of not less than 60, C) a bifunctional monomer with a L-scale Rockwell hardness of not less than 60, and D) a photochromic compound.

Applicants are entitled to full and fair examination of all the presently pending claims. In the event the Examiner refuses, Applicants remind the Examiner of his duty to *sua sponte* return any restricted subject matter back into the captioned application.

Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the Restriction Requirement.

2. Objections to the Specification and Claims

The Office Action objects to the specification and claims for

the following reasons outlined in points 7-9:

7. The claims designate monomer C) as a "bifunctional" polymerizable monomer whereas the specification on page 4, line 35 and page 18, lines 22-23 describes a "difunctional" polymerizable monomer. The term "bifunctional" denotes the presence of two diverse reactive groups such as a glycidyl group vs. a (meth)acrylate group, or an allyl or divinyl group vs. a (meth)acrylate group. The species of monomers C) listed on page 19, lines 2-15 contain two of the same reactive groups. Therefore, the claimed "bifunctional" polymerizable monomer C) would be more accurately defined as "difunctional" which would also be consistent with the specification.

8. There is no antecedent basis in claim 21 for the compound having at least one epoxy group being glycidyl methacrylate of withdrawn claim 26 since claim 21 does not define an epoxy group-containing polymerizable monomer.

9. The specification on page 43, lines 14-15 exemplifies "propylene" glycol methacrylate "MAPPG" whereas the specification on page 11, line 33 to page 12, line 2 indicate "polypropylene" glycol methacrylate as a species of low hardness monomer A).

Regarding point 7 of the Office Action, Applicants have amended the specification and claims to change all instances of "bifunctional" to "difunctional".

Regarding point 8 of the Office Action, Applicants note that the Office Action has correctly pointed out that claim 26 improperly depends from claim 21. Claim 26 should instead be

dependant upon claim 25. However, since claim 25 is also withdrawn due to the Restriction, claim 26 cannot be amended. In the event, the Restriction is withdrawn as being improper, Applicant will amend claim 26 to depend from claim 25 rather than claim 21.

Regarding point 9 of the Office Action, Applicants have amended the specification at page 43, lines 14-15, to change "propylene glycol methacrylate" to "polypropylene glycol methacrylate".

Accordingly, Applicants respectfully submit that all the objections to the specification and claims have been overcome and request withdrawal of the objections.

3. Rejection of the specification
under 35 U.S.C. § 112, ¶ 1

The Office Action rejects the specification as failing to comply with the "full, clear, concise, and exact terms" requirement. The Office Action states:

1) The lack of a definition for the term "Y" in formulae (10) and (11) depicted on page 29, lines 16-28 and claim 3. The specification on page 29 lines 29-31 indicates that the portion of the formula containing "Y" "is a substituted or unsubstituted aromatic hydrocarbon group, or a substituted or unsubstituted unsaturated heterocyclic group."

However, there is no description of what "Y" represents within the (un)substituted unsaturated aromatic or heterocyclic group.

2) General formula (14) and the formulae shown on page 33, lines 1-12 and 26-33 which show an fused saturated oxycyclohexyl group which is structurally distinct from the oxycyclohexyl groups with an unsaturated group encompassed by general formula (10) and illuminated by the formulae and species exhibited on pages 34-37.

3) The lack of a definition for "K" in the formula set forth on page 33, lines 1-12. Page 33, lines 18-25 reveals that the portion of the formula with "K" "is a substituted or unsubstituted aromatic hydrocarbon group, or a substituted or unsubstituted unsaturated heterocyclic group." However, there is no description of what "Y" represents within the (un)substituted unsaturated aromatic or heterocyclic group.

Applicants respectfully traverse the rejections because the specification very fully, very clearly, very concisely, and very exactly recites the subject matter encompassed by the terms "Y" and "K".

For example, "Y" in the formula (10) clearly indicates to one of ordinary skill in the art that the ring including "Y" is an aromatic ring or an unsaturated heterocyclic ring where it is further very clear that "Y" represents a portion obtained by removing $-C=C-$ from the aromatic hydrocarbon ring or the heterocyclic ring.

Similarly, it is also very clear that "K" represents a portion obtained by removing -C=C- from the aromatic hydrocarbon ring or the heterocyclic ring for the group containing "K" on page 33, lines 1-12 of the specification.

However, in the interest of advancing prosecution of the allowed claims, Applicants have amended the specification to recite the phrases "Y represents a portion obtained by removing -C=C- from the aromatic or heterocyclic group" and "K represents a portion obtained by removing -C=C- from the aromatic or heterocyclic group".

Regarding sub-point 2 of the rejection, Applicants are unsure as to what point the Office Action is attempting to make by the phrase:

General formula (14) and the formulae shown on page 33, lines 1-12 and 26-33 which show an fused saturated oxycyclohexyl group which is structurally distinct from the oxycyclohexyl groups with an unsaturated group encompassed by general formula (10) and illuminated by the formulae and species exhibited on pages 34-37.

Accordingly, Applicants respectfully submit that the specification as amended describes the invention in "full, clear, concise, and exact terms" and therefore request withdrawal of the rejections of the specification under § 112, ¶ 1.

4. Rejection of Claims 1-3
under 35 U.S.C. § 112, ¶ 1

The Office Action rejects claims 1-3 under 35 U.S.C. § 112, ¶ 1 as failing to comply with the enablement requirement. The Office Action states:

Independent claim 1 denotes a low hardness polymerizable monomer A) which according to page 14, line 33 to page 15, line 14 encompasses a "compound having at least one epoxy group in the molecule but without having radically polymerizable group in the molecule," and according to page 15, lines 15-32 embraces a "compound having at least one thioepoxy group in the molecule but without radically polymerizable group in the molecule."

It's unclear how a monomer without a radically polymerizable group is capable of meeting the claimed requirement of a curable composition or a cured product when the absence of a radically polymerizable group precludes an addition polymerization reaction with polymerizable monomers A) and C). The epoxy group or thioepoxy group does not react or polymerize with the polymerizable group of the other monomers.

Applicants respectfully traverse the rejection because one of ordinary skill in the art would know that the epoxy group or the thioepoxy group of the presently claimed compositions can undergo a poly-addition reaction with a double-bonding group in the presence of radicals.

Although the Office Action suggests that the low hardness monomers such as 5 and 6 having an epoxy group or a thioepoxy group in the absence of a radically polymerizable group in the molecule precludes an addition polymerization reaction, Applicants note that the epoxy group or the thioepoxy group undergoes the poly-addition reaction with a double-bonding group in the presence of radicals.

In other words, the low hardness monomers 5 and 6 described at page 15, lines 1 and 17, respectively, are capable of forming homopolymers upon ring-opening polymerization. Even without a radically polymerizable group such as a double-bonding group, the compounds having the groups described in the specification form a cured product based on the radical polymerization due to the use of other monomer components (B) or (C).

Applicants remind the Examiner that the test under 35 U.S.C. § 112, ¶ 1 for determining compliance with the enablement requirement is whether one skilled in the art could make or use the claimed invention from the disclosure in the patent coupled with information known in the art without undue experimentation. United States v. Telectronics, Inc., 8 USPQ2d 1217 (Fed. Cir. 1988).

Given that one of ordinary skill in the art would know that the epoxy group or the thioepoxy group of the presently claimed compositions can undergo a poly-addition reaction with a double-bonding group in the presence of radicals, the specification

sufficiently enables one skilled in the art to make and/or use the presently claimed invention.

Accordingly, Applicants respectfully submit that claims 1-3 are fully enabled by the specification and request withdrawal of the rejection under § 112, ¶ 1.

5. Rejection of Claims 3 and 9
under 35 U.S.C. § 112, ¶ 1

The Office Action rejects claims 3 and 9 as failing to comply with the enablement requirement. The Office Action states:

Claim 3 according to the copy of the claims filed August 13, 2004 does not define Y, R²⁸-R³² and u which quantifies R³² in formulae (10) and (11). The substituents except for Y are denoted on page 29, line 23 to page 30, line 34 of the specification.

Claim 9 does not completely identify R¹⁰ and R¹¹ and fails to reveal R¹² and the oxyalkylene (meth)acrylate repeating unit quantified by b in general formula (4). The substituents are denoted on page 17, lines 26-30.

Applicants respectfully traverse the rejections because claim 3 very clearly defines R²⁸-R³² in line 16 on page 65 of the specification.

Regarding the Office Action's assertion that a copy of the claims was filed on August 13, 2004, Applicants note that no such

filing was ever made. Furthermore, claim 3 up until to this point was pending as originally filed.

However, the definition of "Y" has been added to the claim consistent with the amendments made to the specification stating that "Y represents a portion obtained by removing -C=C- from the aromatic or heterocyclic group".

Regarding the rejection over claim 9, Applicants note that the claim very clearly states that R¹⁰ and R¹¹ are, independently from each other, hydrogen atoms or alkyl groups having 1 to 2 carbon atoms, and R¹² is a trivalent to hexavalent organic residue, and that b is an integer of 3 to 6.

Accordingly, Applicants respectfully submit that claims 3 and 9 are fully enabled and request withdrawal of the rejections under § 112, ¶ 1.

**6. Rejection of Claims 1-11, 15, 19-22 and 26-27
under the judicially created doctrine of obviousness-type
patenting**

The Office Action rejects claims 1-11, 15, 19-22 and 26-27 under the judicially created doctrine of obviousness-type patenting as being unpatentable over claims 4-5 and 7 of U.S. Patent No. 6,802,993. The Office Action states:

Although the conflicting claims are not

identical, they are not patentably distinct from each other. The claims of the patent set forth a curable composition comprising a **tri(meth)acrylate to hexa(meth)acrylate polymerizable monomer (A)** (claim 1) whose homopolymer has a L-scale Rockwell hardness of at least 60 (claim 3) corresponding to instantly claimed polyfunctional polymerizable monomer B) combined with another polymerizable monomer C) which is at least one of **(i) a bifunctional monomer** whose homopolymer has a L-scale Rockwell hardness of at least 60 within the realm of instantly claimed bifunctional polymerizable monomer C) and **(iii) a polymerizable monomer** whose homopolymer has a L-scale Rockwell hardness of at most 40 embraced by instantly claimed monomer A). The monomer mixture is blended with a photochromic compound.

The claims do not preclude the silyl monomer (B) of the patent.

Applicants respectfully traverse the rejection. However, in the interest of advancing prosecution, Applicants now file a terminal disclaimer over U.S. Patent No. 6,802,993.

Accordingly, Applicants respectfully submit that the rejection is now moot and request withdrawal of the rejection.

5. **Rejection of Claims 1-11, 15, 19-22 and 27
under 35 U.S.C. § 102(e)**

The Office Action rejects claims 1-11, 15, 19-22 and 27 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No.

6,194,511 ("Momoda et al."). The Office Action states:

Momoda et al. discloses a curable composition prepared from 20-90% by weight (col. 4, lines 57-59) of (A) a sulfur-containing (meth)acrylate (col. 3, lines 32-64) such as **bis(2-methacryloyloxyethylthioethyl)sulfide** (col. 3, line 23, deemed to be a suitable type of the claimed bifunctional polymerizable monomer C) according to the exemplified species identified on page 45, lines 4-5 of the specification), from 1-100 parts by weight of an epoxy-containing (meth)acrylate such as **glycidyl acrylate** (col. 8, line 29, a species of the claimed low hardness monomer A) according to page 14, line 25 and page 44, line 1), from 0-500 parts by weight of another (meth)acrylate polymerizable monomer (C) such as the elected species of **trimethylolpropane trimethacrylate** (col. 7, lines 34-35, conforming to claimed polyfunctional polymerizable monomer B)), and from 0.001-10 parts by weight (col. 18, lines 66-67) of a photochromic compound.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Applicants respectfully traverse the rejection because Momoda et al. is not prior art. Momoda et al. is only a reference under § 102(e) because Momoda et al. issued on February 27, 2001, which is

after the International filing date of July 18, 2000, for the captioned application. However, Momoda et al. is disqualified as prior art because the captioned application and the reference were subject to an obligation of common assignment to Tokuyama Corp. at the time of invention.

A copy of "Notice of Recordation of Assignment Sheet" for Momoda et al. attached to an Assignment showing an execution date of February 18, 1999, is submitted herewith. Since the captioned application and Momoda et al. were subject to an obligation of common ownership to Tokuyama Corp. at the time the invention was made, the Restriction Requirement based on the Momoda et al. patent must be withdrawn.

Accordingly, Applicants respectfully submit that the rejection is improper and request withdrawal of the rejection under § 102(e).

6. Rejection of Claims 1-11, 15, 19-22 and 27
under 35 U.S.C. § 102(a)

The Office Action rejects claims 1-11, 15, 19-22 and 27 under 35 U.S.C. § 102(a) as being anticipated by European Patent No. 940,694. The Office Action states:

The European patent is an equivalent of Momoda et al. Patent No. 6,194,511 described hereinabove and applied for the same reasons. The filing date of the European patent of

September 8, 1999 antedates the effective filing date of the instant application of July 18, 2000. Only the submission of a certified English translation of Japanese priority application no. 205165/99 filed July 19, 1999 wherein the claimed subject matter is supported therein can antedate the European patent. [**emphasis added**]

Applicants respectfully traverse the rejection because Applicants perfect their claim to foreign priority under § 119, thereby avoiding European Patent No. 940,694 as a reference.

Although the Office Action rejects claims 1-11, 15, 19-22 and 27 under 35 U.S.C. § 102(a) as being anticipated by EP 0 940 694 because the "filing date" of the patent antedates the effective filing date of the captioned application, Applicants presume that the recitation of the "publication date" rather than the "filing date" was intended.

As suggested in the Office Action, Applicants submit a certified English translation of the Japanese priority document 205165/99 to overcome the rejection.

Accordingly, Applicants respectfully submit that European Patent No. 940,694 is antedated as a § 102(a) reference and respectfully request the Examiner to reconsider and withdraw the rejection to claims 1-11, 15, 19-22 and 27.

6. Rejection of Claims 1-11, 15, 19-22 and 27
under 35 U.S.C. § 103(a)

The Office Action rejects claims 1-11, 15, 19-22 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent No. 10-338869. The Office Action states:

The Japanese patent (Chemical abstracts accession no. 1998:816652) shows a curable composition obtained from (A) 10-100 parts by weight of a tri(meth)acrylate to hexa(meth)acrylate such as the elected species of **trimethylolpropane trimethacrylate** (translation, page 5, paragraph 24, line 2 and page 15, paragraph 94, line 2, within the ambit of claimed polyfunctional polymerizable monomer B)), (B) from 0-90 parts by weight of a difunctional (meth)acrylate such as **polyethylene glycol trimethacrylate** (page 6, paragraph 29, lines 2-4 and page 16, lines 1-2, encompassed by claimed bifunctional polymerizable monomer C)), (C) from 0-90 parts by weight (page 7, lines 17-20) of a (meth)acrylate such as glycidyl, methyl, ethyl or butyl acrylate (page 6, paragraph 31, lines 6 and 10, within the confines of the claimed low hardness polymerizable monomer A) according to page 14, lines 23-25), and from 0.001-10 parts by weight of a chromene photochromic compound (page 8, paragraph 35, Formula 9).

Tables 1 and 2 on page 17 shows blends of poly(meth)acrylates such as trimethylolpropane trimethacrylate (TMPT) embraced by claimed monomer B) and polypropylene or tetraethylene glycol dimethacrylates (page 15, paragraph 94, line 9 to page 16, line 2, 3PG, 4PG, 9PG and 4G, species of claimed low hardness monomer A) as espoused in the instant specification on page 13, lines 3-4 and 8-9). Glycidyl methacrylate is shown as the additional (meth)acrylate. It is well within the purview

to employ the disclosed species of (meth)acrylate such as the glycidyl, methyl, ethyl or butyl acrylate.

There is no evidence of record distinguishing the claimed low hardness monomer A) over the closest prior art glycidyl methacrylate of the Japanese patent wherein the types and amounts of monomers B) and C) as well as the type and amount of photochromic compound are held constant to isolate the effect of the low hardness monomer. The low hardness monomer encompasses a variety of structurally and quantitatively functionally distinct species such as those set forth on page 7, lines 27-30; page 11, line 25 to page 13, line 19; page 14, lines 22-25 and 30-32 and page 15, lines 8-14 and 26-32.

Applicants respectfully traverse this rejection because a *prima facie* case of obviousness has not been established. Each and every one of the presently claimed limitations are not taught or suggested by the cited reference. In particular, Japanese Patent No. 10-338869 fails to teach a photochromic compound having a molecular weight of not smaller than 540. Even assuming *arguendo* that a *prima facie* case has been made out, Applicants rebut the presumption with evidence in the Examples showing the unexpectedly improved properties of the presently claimed invention.

Rule of Law

The Federal Circuit held that a *prima facie* case of obviousness must establish: (1) some suggestion or motivation to

modify the references; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

Even if a *prima facie* case of obviousness has been established, secondary considerations such as commercial success, long felt but unsolved need, failure of others, and unexpected results may nevertheless give rise to a patentable invention. Graham v. John Deere Co., 148 U.S.P.Q. 459 (1966). Where the claimed and prior art products are substantially similar, a *prima facie* case of obviousness can also be rebutted by demonstrating that the prior art products do not possess the characteristics of the claimed invention. In re Best, 196 U.S.P.Q. 430, 433 (C.C.P.A. 1977).

Amended claim 1

In the present application, amended independent claim 1 recites, a curable composition which,

when cured, exhibits an L-scale Rockwell hardness of not smaller than 60, comprising:

A) a polymerizable monomer which, when homopolymerized,

exhibits the L-scale Rockwell hardness of not larger than 40;

B) a polyfunctional polymerizable monomer which is trifunctional or more highly functional and which, when homopolymerized, exhibits the L-scale Rockwell hardness of not smaller than 60;

C) a difunctional polymerizable monomer which, when homopolymerized, exhibits the L-scale Rockwell hardness of not smaller than 60; and

D) a photochromic compound having a molecular weight of not smaller than 540.

The cited reference does not teach all the claimed limitations

The reference fails to teach or suggest the presently claimed curable composition having the claimed components and having a photochromic compound having a molecular weight of not smaller than 540. Although JP '869 teaches a curable composition containing a photochromic compound, the reference does not disclose or suggest the use of the chromene compound having a molecular weight of not smaller than 540 as a photochromic compound.

JP '869 exemplifies chromene compounds in paragraph [0077] having a molecular weight no greater than 515. As shown in the attached Exhibit A, no chromene in JP '869 has a molecular weight

within the presently claimed range of not smaller than 540. Moreover, the compounds disclosed in paragraph [0074] by JP '869 have different structural formulas much different than those greater than those compounds having a molecular weight of not smaller than 540.

In particular, the presently claimed curable composition has a low hardness monomer (A), a polyfunctional high hardness monomer (B) having a functionality of three or higher, and a difunctional high hardness monomer (C) combined with a chromene compound having a molecular weight of not smaller than 540.

One of ordinary skill in the art would know that among photochromic compounds that chromene compounds have a superior resistance to photochromic light over other photochromic compounds. One of ordinary skill in the art would also know that generally, the properties of the chromene compound are improved with an increase in molecular weight. However, an increase in molecular weight also produces undesirable effects such as a decreased reaction rate and a decreased fading rate.

But contrary to the general knowledge within the art, the presently claimed invention has a chromene compound of a molecular weight of not smaller than 540 wherein the claimed monomer composition has an increased reaction rate. The claim composition also has other desirable properties such as an increased fading

rate.

Known chromene compounds such as Example 39 (chromene 4) in the specification have a molecular weight of 376. However, Example 39 has a fading rate (time until the light absorbency becomes smaller than 0.1) of 3.8 minutes. This fading rate is much slower than the fading rates of the examples of the claimed invention. On the other hand, the Examples of the claimed invention use chromene compounds having molecular weights of not smaller than 540 but have increased fading rates. Clearly, the claimed limitations are unobvious because the claimed limitations have unexpected results contrary to the knowledge known within the art.

Any possible admonition that it would have been "obvious to try" to vary molecular weights is improper. This is because in some cases, what would have been "obvious to try" would have been to vary all parameters or try each of numerous choices until one possibly arrived at a successful result. Since the reference fails to give any indication that the claimed limitations result in improved reaction and fading rates, it would not have been obvious to try to make a composition incorporating a chromene compound with the claimed molecular weight. See In re O'Farrell, 853 F.2d 894, 903, U.S.P.Q.2d 1673, 1681 (Fed. Cir. 1988).

Accordingly, Applicants respectfully submit that the presently claimed invention is unobvious over the cited reference and

respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103.

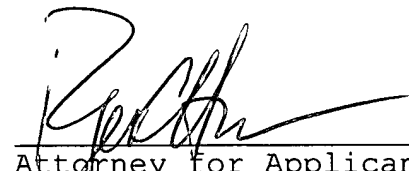
CONCLUSION

In light of the foregoing, Applicants submit that the application is now in condition for allowance. The Examiner is therefore respectfully requested to reconsider and withdraw the rejection of the pending claims and allow the pending claims. Favorable action with an early allowance of the claims pending is earnestly solicited.

Respectfully submitted,

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